Basics

Studio Display (21" CRT, 19.8" viewable image size)

Overview

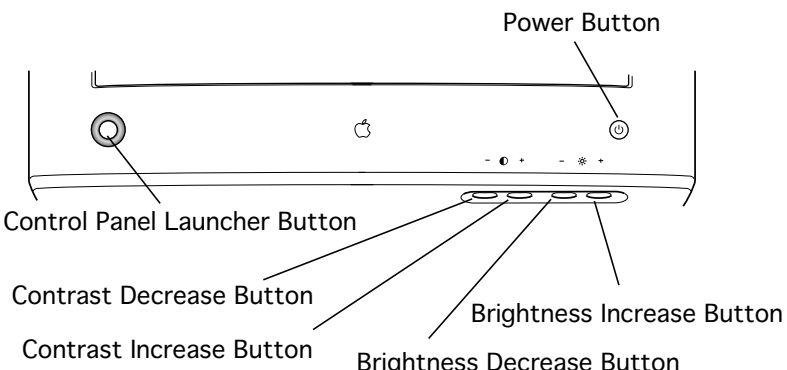
The Studio Display (21" CRT, 19.8" viewable image size) supports screen resolutions ranging from 640 x 480 at 60 Hz to 1600 x 1200 at 85 Hz.

The Studio Display (21" CRT) complies with TCO 99 as certified by the Swedish Confederation of Professional Employees to meet global safety tests and energy-saving features.

Features

Features of the Studio Display (21" CRT) include

- 21-inch (19.8-inch diagonal viewable image size) Sony Trinitron CRT
- 0.25/0.27 mm variable aperture grille pitch
- four USB ports for high-speed USB devices
- horizontal scan rate of 31.5–106 kHz
- multiple resolutions
- translucent plastic housing and tripod stand
- user controls for brightness, contrast, and the Monitors & Sound control panel
- compatibility with USB-based, 1999-model Power Macintosh G3 or Power Mac G4 computers (refer to “Extended Compatibility for Service” in this chapter for more details on compatibility)
- Energy Star compliance



The front panel of the display includes the following controls:

- power button
- brightness increase and decrease
- contrast increase and decrease
- control panel launcher button

The control panel launcher button opens the Monitors & Sound control panel window.

Repair Issues

Caution: Out of the box, the Studio Display (21" CRT) weighs 77 pounds (35 kg). Use caution when lifting or moving the display. To move it, lift it by the hand grips on the bottom of the display. It is recommended that two people lift the monitor together.

The new exterior design features of this display include a two-color translucent housing, a tripod monitor stand, and a VGA-style video cable with a VGA-to-Macintosh adapter.

Protecting the Translucent Housing

Important: Because the housing of this monitor is made of translucent plastic, surface scratches can be more visible than on a standard plastic housing. To avoid cosmetic damage and protect the housing during service procedures, please keep in mind the following precautions:

- Use a protective pad that is clean and free of debris whenever you service the display.
- Use caution working with metal tools to avoid scratching the housing.
- Before placing the display face down on a book or ream of paper, ensure the surface provides protection from scratches.

New Tripod Stand Safety Tips

Because this is a new design, keep in mind the following:

- **Caution:** Lift the display by the hand grips under the left and right sides of the display. Never lift the display by the tripod stand.
- **Caution:** Do not adjust the position of the monitor by pushing or pulling the stand legs. The tripod stand is subject to cracking or breakage if mishandled.
- ⚠**Warning:** When placing the monitor on a table surface, ensure that all three legs on the tripod stand contact the surface. If one of the legs is too close to the table edge, the weight of the monitor could cause the display to fall off the edge.

VGA-to-Macintosh Adapter

The connector on the display cable is a VGA video connector.

To ensure the proper connection to your computer or video card, click the icon Update.pdf for instructions on using the VGA-to-Macintosh adapter that comes with the Studio Display (21" CRT).

Update.pdf

Extended Compatibility for Service

This Studio Display (21" CRT) works with USB-based, 1999-model Power Macintosh G3 or Power Mac G4 computers. These configurations are still the only approved configurations for customers using this display. However, Apple-authorized service providers may service the display using the following PCI-based Power Macintosh computers, running Mac OS 8.5 or later, with a third-party Keyspan USB card installed in the PCI slot:

- Power Macintosh 4400
- Power Macintosh 6500
- Power Macintosh 7200
- Power Macintosh 7250
- Power Macintosh 7300
- Power Macintosh 7350
- Power Macintosh 8500
- Power Macintosh 8550

Find out about the Keyspan USB card at: http://www.keyspan.com

- Power Macintosh 8600
- Power Macintosh 9600
- Power Macintosh 9650

To properly set up the display to work with one of the listed Power Macintosh computers, follow these steps:

1 Confirm that the computer has at least 2 MB VRAM (required to enable all screen resolutions).

2 Install the Keyspan USB card in the PCI expansion slot.

3 Perform a clean install with Mac OS 8.5 or later.

4 **Important:** To avoid a system “freeze” with a blank screen, open the Energy Saver control panel and set the system sleep mode to Never.

5 Install USB driver 1.1 or later (called Mac Installer) from the disc that comes with the Keyspan USB card.

6 Install Apple Displays Software 1.7.1 or later.

7 Restart system and verify that USB ports are working.

USB Display Service Utility, version 2.1.2

In February 2000 version 2.1.2 of the USB Display Service Utility was introduced. The main difference between this version and earlier versions is the addition of PowerBook (FireWire) compatibility.

Important: Destroy previous versions of the USB Display Service Utility. To avoid loss of data, use only the latest version of the USB DSU. Refer to the Read Me file for more information. You can access the Read Me file and the latest version of the USB Display Service Utility from the Service Diagnostics page from Service Source Online.

⚠**Warning:** If you plan to use a PowerBook (FireWire) to download setup parameters, refer to “When the Second Display is a PowerBook (FireWire)” in the Adjustments chapter. You must follow that procedure to avoid loss of data or functionality.

Apple Displays Software, version 1.8

In August 1999 version 1.8 of the Apple Displays Software was released. One of the main differences from previous versions (1.7.1 and earlier) is the name of a control panel.

The Monitors & Sound control panel (in versions 1.7.1 and earlier), used for some screen adjustments, is now called the Monitors control panel in version 1.8 and later. The features of the Monitors control panel are the same as the old Monitors & Sound control panel, except audio controls now have their own separate Sound control panel.

References in this manual that previously specified the Monitors & Sound control panel, now specify the Monitors control panel.

New Housing Color

In August 1999, a new version of the Studio Display (21" CRT) was introduced. The display performance and internal circuitry remains the same as the original version. However, the new version offers a new housing color.

Unlike the original colors of translucent blue and white, the new version of the display is translucent graphite and white.

Important: The housing parts (rear housing, bottom housing with colored control panel buttons, intermediate bezel, front bezel, product ID label, and USB label) should be exchanged like for like.

The following table shows the Apple part numbers for the housing parts that differ

by color. Finished goods number M6204LL/A represents the original blue and white version; M6204LL/B represents the new graphite and white version.

Part Name	M6204LL/A	M6204LL/B
Rear housing	922-3681	922-3914
Bottom housing	922-3723	922-3917
Intermed. bezel	922-3726	922-3916
Front bezel	922-3725	922-3913
Product ID label	922-3756	922-3918
USB label	922-3757	922-4055

In addition, a button panel kit (076-0805) contains one of each color of the button control panel (brightness and contrast buttons).

New Version of CRT/Video Board

In November 1999, a new version of the CRT/video board was released. The new version was necessary to handle a discontinuation of a board component. Adding a different manufacturer's component required a somewhat different board layout.

Important: Version 2 (Apple part number 661-2231) is not backward compatible with Version 1 (Apple part number 661-2116). Before replacing a CRT/video board, you must verify its version and exchange boards like for like.

For details on identifying the two boards, refer to the section "Two Versions of the CRT/Video Board" in the Troubleshooting chapter.

U.S. Repair Strategy

The Studio Display (21" CRT) is serviced through the service facilitation process. Customers may choose carry-in repair service through an Apple Authorized Service Provider (AASP) who will then facilitate a mail-in repair or customers can receive mail-in service from Apple directly.

Ordering

Apple Service Providers planning to support the Studio Display (21" CRT) may facilitate service by calling 800-919-2775.

For more details on this facilitation process, please refer to the Facilitation Process in the archived service notices section of the Service Source CD. (Open the Notices Archive

folder at the top level of the Main CD. The complete path is Notices Archive: Service Notices Archive: Service Source Startup: Service Information: Notices: Service Notices: Archived List: Facilitation Process.)

Parts

To order replacement parts, use the AppleOrder system and refer to Studio Display (21" CRT) in the “Service Price Pages.” Large businesses, universities, and K-12 accounts must provide a purchase order on all transactions, including orders placed through the AppleOrder system.

Service providers not enrolled in AppleOrder may fax their orders to Service Provider Support (512-908-8125) or mail them to the following address:

Apple Computer, Inc.
Service Provider Support
MS 212-SPS
Austin, TX 78714-9125

If you have further questions, please call Service Provider Support at 800-919-2775 and select option #1.

Warranty and AppleCare

The Studio Display (21" CRT) is covered under the Apple One-Year Limited Warranty. The AppleCare Service Plan is also available for this product. Service Providers are reimbursed for warranty and AppleCare repairs facilitated for this display. For pricing information, refer to “Service Price Pages.”

Canada Repair Strategy

The service strategy for the Studio Display (21" CRT) is module replacement. However, sometimes replacing modules may not resolve the issue. For those issues, whole-unit replacements are available. To limit “no fault found” returns on the unit, please use the following procedure when you require a whole-unit replacement:

1 Troubleshoot the unit to ensure the problem isn't with the software or with the computer.

2 After confirming the issue is with the display, refer to Service Source Online or the Service Price Pages to order the modules necessary to repair the display.

3 If the module necessary is not available, or you require a whole-unit replacement, call Technical Service Provider Support (TSPS) at 1-800-217-9517 (have

your 10-digit service account number (beginning with 61) ready). Be prepared to explain the issue, your troubleshooting steps, and the display's serial number to the TSPS phone agent.

4 After verifying the troubleshooting you've performed, the TSPS phone agent will authorize the repair by giving you the whole-unit service replacement part number, and a Vantive case number.

5 Use AppleOrder to place the order for the whole-unit service replacement by manually populating the Part Number field with the part number given to you by the TSPS. Then mark the order for review, and put the Vantive case number in the Comments field. Failure to do so will result in your order being declined.

When you receive the whole-unit service replacement, return the old display as you would any service module.